group "reflect a view of 'national interest' and 'national security' that is derived largely from concerns related to the government's need for military and diplomatic security". Other factors which it says should be considered include the competitive needs of the US information processing industry, and the need to protect individuals from unwarranted invasions of privacy.

The two advisory committees decided last autumn to investigate the role of NSF in supporting cryptological research, following an incident in which a computer research scientist who, having applied to NSF for a grant, was told that NSA was interested in supporting his research — even though he had not approached the security agency. In general, the committees endorse the policy outlined at the time by NSF deputy director Dr Donald Langenberg.

However, the committee's report takes issue with Dr Langenberg's remark that imposing more stringent reporting requirements on scientists should be viewed "simply as a change in administrative practice". Rather, it says, any change in current practice should be considered a significant shift in policy which could represent "serious interference with the conduct of research".

The committees also object to the letter being sent to those who are awarded cryptography grants notifying them that they should seek prior review by NSF of any results which might have national security implications. The report believes this would adversely affect research and proposes instead that a description of the research results should be forwarded to NSF or to any other government agency designated by the foundation — at the same time as its dissemination to other scientists or publication.

The NSF report points out that NSA has proposed spending between two and three million dollars a year on unclassified research — "We doubt that this much money could be spent productively supporting academic work on cryptography and cryptanalysis, and imagine that NSA will end up funding and taking an active interest in a relatively wide variety of research projects". And it warns of the potential dangers of NSA becoming the principal source of funding for cryptology research as the Defense Advanced Research Projects Agency has done in fields such as artificial intelligence and systems research.

The Association of Computing Machinery (ACM) is also concerned over moves in Congress to give the federal government greater powers to control the publication of scientific or technical data. In particular, ACM has criticized a bill introduced by Representative Charles E. Bennett of Florida which would extend existing controls on "militarily critical" technologies to cover not only hardware, but any related technical information.

Dr Peter Denning, the president of ACM, feels that the bill would extend to many areas of research the type of "born classified" restrictions now applied to nuclear research under the terms of the Atomic Energy Act, and used as the basis for the (unsuccessful) prosecution last year of the *Progressive* magazine for publishing details of how a hydrogen bomb works.

The Reagan administration's attitude to this whole area is uncertain. Mr Lawrence Brady, nominated to head the Commerce Department's office responsible for export controls, promised a Senate committee last month that a new East-West trade policy, expected from the White House in a few weeks, would include rigorous new criteria for screening critical technology.

Mr Brady's appointment, however, has worried representatives of several multinational companies who feel that his zeal in restricting high technology exports to the Soviet Union may prove costly to them. The Administration is trying to define an acceptable compromise between the high priority it has given "national security" arguments, and the freedom being demanded by both technology exporters and the academic community. The sharp division between the ACE study and the NSF advisory committee indicates that such a compromise may still be far away.

David Dickson

UK agricultural research

Change at the top

The recent appointment of two chief scientists to the British Ministry of Agriculture, Fisheries and Food is expected to increase the ministry's influence on research supported by the Agricultural Research Council. But there is to be no formal change in the relationship; this has been ruled out by the Secretary of State for Agriculture, together with the possibility that more money should be transferred from the council to the ministry for spending on commissioned research.

These developments help to clarify more than a year's uncertainty about the future relationship between the two organizations. After the House of Commons Public Accounts Committee recommended in July 1979 that the ministry should have greater control over the council's research, a committee under the chairmanship of Sir Brian Hayes, permanent secretary at the ministry, was set up to decide what should be done.

One of its conclusions was that the Rothschild principle, whereby almost half of the council's research is commissioned by the ministry, is to remain intact. Another was that the ministry could exert more influence if it coordinated its own science policy more effectively. To that end, the former chief scientist, Professor B. G. Weitz, has been replaced by two chief scientists, Professor Frank Raymond for agriculture and horticulture and Dr George

French to make Arabsat

The French aerospace firm la Société Nationale Industrielle Aérospatiale (SNIAS) has won the coveted contract for "Arabsat" — a clutch of three communications satellites with an option on a fourth, for the Middle East — in competition with British Aerospace and the Hughes Corporation. But hidden behind SNIAS is Ford Aerospace, which will get 55 per cent of the \$134.3 million deal. Until recently Ford was under an Arab boycott, and the company clearly thought it politic to work with a French partner, French-Arab friendship having been so strong under President Giscard d'Estaing.

British Aerospace are understandably downhearted. The firm has so far sold satellite systems only to the European Space Agency (ESA), and it saw Arabsat as a potential breakthrough into new markets.

But British Aerospace still have orders for seven satellites worth £100 million, which will keep them busy until 1985. The company is building five communications satellites for ESA, each capable of carrying 12,500 telephone conversations and two television channels. These are bigger than the Arabsats which will be designed for 8,000 telephone lines. British Aerospace are also building two maritime "Marecs" satellites for ESA, the first due to be launched by Ariane in October.

Meanwhile SNIAS is crowing just as British Aerospace would have done if it had won Arabsat. It is the first time a French aerospace firm has won the place of prime contractor for a foreign satellite system. SNIAS now have their eye on Australia, Columbia, Mexico and Brazil.

Robert Walgate

Elton for fisheries and food.

The idea is that two chief scientists will enable the ministry to make better use of the Agricultural Development and Advisory Service (ADAS), which accounts for almost half of the ministry's staff and advises farmers and officials on technical aspects of agricultural and horticultural practice. Professor Raymond will report to ADAS and formulate an appropriate policy for research. Thus the influence of ADAS within the ministry will also be enhanced. Dr Elton will concentrate on fisheries and food research. Both chief scientists will sit on the Agricultural Research Council.

Precisely how the new arrangements will affect the council remains to be seen. But the outcome contrasts sharply with the situation for medical research: last October, the Medical Research Council won back most of the money transferred to the Department of Health, so doing away with the Rothschild principle.

Judy Redfearn